



PRECONDITIONING FOR SKIING AND SNOWBOARDING

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Believe it or not, it is time to get ready for alpine skiing again. Summer typically isn't the time when we start thinking about skiing, but definitely is the time to start getting in shape for the sport. Skiing is a very demanding sport in which many of the injuries could be prevented if people were in better shape coming into the season, rather than trying to ski themselves into shape.

Needs of the sport ...

There are five main elements when training for alpine skiing/snowboarding: 1) strength 2) flexibility 3) endurance 4) balance 5) anaerobic power. Strength is probably the most important element of the sport, considering the high strength demands it requires to carve a turn in skiing/snowboarding. The major muscles involved in skiing/snowboarding are the muscles of the legs, which include the quadriceps, the hamstrings, the abductors, and adductors (the outer/inner thigh muscles), and the gluteal muscles. The lower back muscles, abdominals, triceps, and latissimus dorsi muscles are highly important as well. It is important to start training these muscles early in the season, due to the fact that that in the first 4-6 weeks of a strength training program neural adaptations are responsible for increase in muscle strength, but it takes 6-8 weeks of proper training for increased muscle to become noticeable and clearly contribute to increased strength.

Flexibility is also highly important in skiing/snowboarding. Having flexible muscles can allow a person to get into the positions needed to achieve the extreme edge angles needed in modern skiing/snowboarding, and help protect them against muscular injury from a fall or during the act of skiing/snowboarding. Having a total body-stretching program is important, but addressing flexibility of the hip adductors (inner thigh muscles), hip abductors (outer thigh muscles), quadriceps, hamstrings, gluteal, lower back, hip flexor, and calf muscles is critical. Unfortunately, flexibility does not happen overnight and takes a lot of stretching over the course of a long period to start noticing flexibility gains.

Endurance is also important for skiing/snowboarding, but not as important as most people think. Most long ski runs last for the duration of two minutes of consecutive skiing. Two minutes is a time frame that utilizes both the aerobic (with oxygen) and anaerobic (without oxygen) systems of the body, but most ski runs are often significantly shorter than this, which makes skiing highly anaerobic at times. However, a long skiing day is over the course of 8 hours, in which having the endurance to complete this long ski day is necessary. This means you don't have to train like an endurance athlete to be in shape for skiing/snowboarding, but it is necessary to do an aerobic (endurance) activity of at least 20-30 minutes, 3 times a week to develop an aerobic base.



The exercises ...

Strengthening exercises for the legs and upper body should consist of gym exercises such as squats, leg press, lunges, hip abduction/adduction machine, hamstring curls, step-ups with weights, bench press, triceps press downs, lat pull downs, and straight arm lat pull downs. The suggested duration of the exercises is 3 sets of 8-12 repetitions for each exercise. The weight lifted should be heavy enough to reach failure on the third set somewhere between the 8th-12th repetitions and performed ideally 3 times per week.

Strengthening exercises for the lower back and abdominals should consist of exercises such as crunches on or off of a Swiss ball, prone opposite arm/leg raises on the floor or on a Swiss ball, diagonal oblique crunches on the floor or on a Swiss ball, and back extensions on a Swiss ball. Three sets of 20-30 repetitions each should be performed for each exercise.

Flexibility exercises should include stretches for the hip abd/adductors, the gluteals, the quadriceps, the hamstrings, the lower back, the hip flexors, and especially the calf muscles, but a flexibility program for the entire body would be beneficial. A 5-10 min warm-up on a stationary bike, walking, or a light jog is beneficial before stretching. Ideally, stretching is performed after a warm-up before training, and again after training. Stretches should be held for 30 seconds. Each stretch should be done 3 times. No pain should be experienced with stretches, but a mild sensation of discomfort should be held statically without bouncing.

Aerobic exercise should be performed for 20-30 minutes/3 times a week, and can be done either inside or outside with activities such as jogging, biking, or swimming. Aerobic exercises don't have to be done in conjunction with either the strength training or flexibility exercises. Anaerobic sprints can also be performed during the aerobic workout to make it more challenging and ski specific. Start with 30-second sprints with a 1-minute recovery, repeat 5-6 times. Gradually work up to 2-minute sprints with a 2-minute recovery, repeat 5.

Balance exercises should consist of exercises such as single leg ¼ squats, performed while balancing on one leg, and single leg isometric holds in a ski/snowboarding specific position. These exercises can also be made more challenging by standing on an unstable surface such as a pillow, couch cushion, or trampoline. Hold or perform these exercises for duration of 30 seconds- 2 minutes to make them time specific to skiing/snowboarding.